

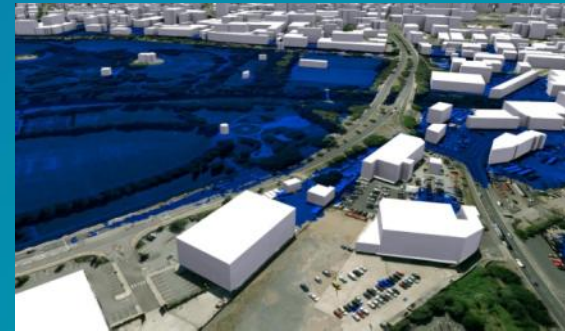
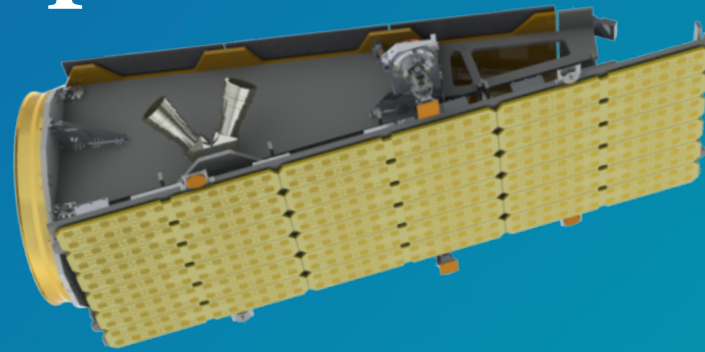
The Satellite Applications Catapult centre – Supporting Application Development

Wyn Cudlip

Presentation to

CEOS WGISS 37

18th April 2014



Catapult is a Technology Strategy Board programme

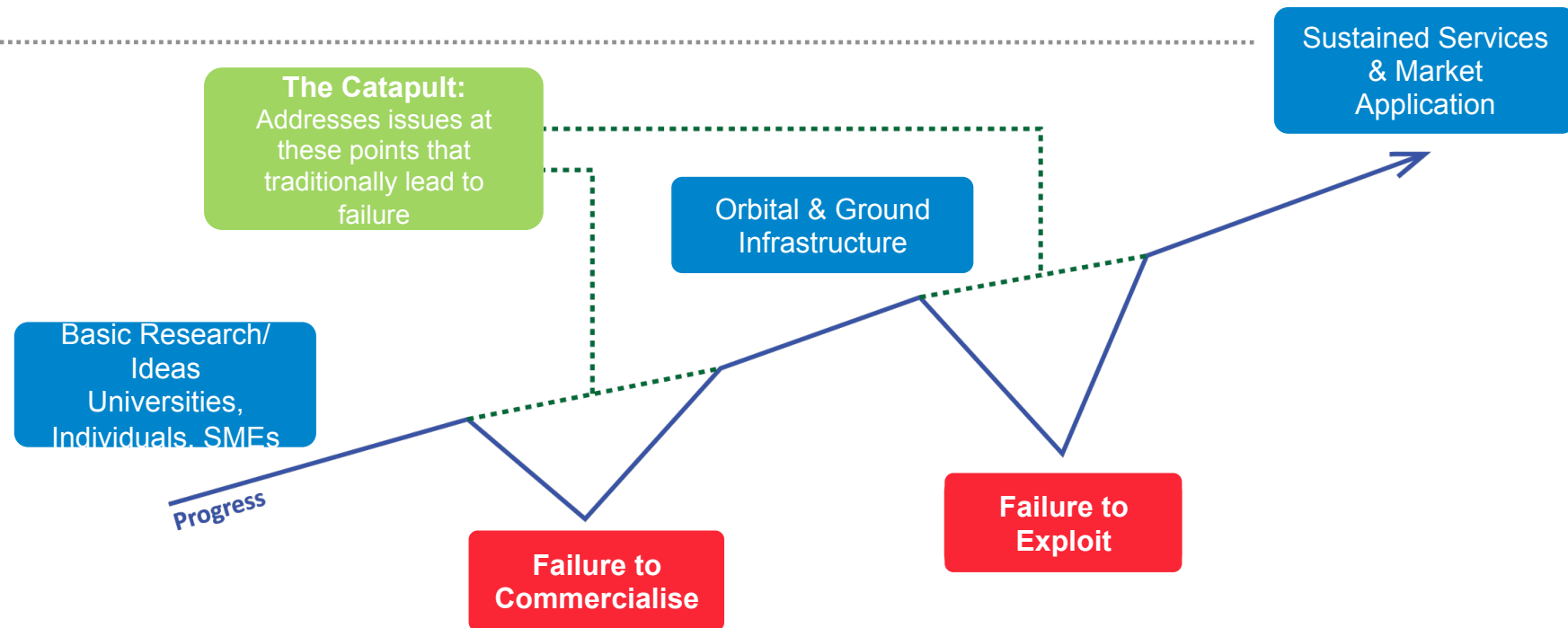
CATAPULT
Satellite Applications

Content of Presentation



- Overview of the Catapult
- Sentinel 1 initial data acquisition
- Relationship with UK Space Agency

Two valleys of death



Major growth in satellite applications but significant barriers for new businesses

Classification: Public

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Satellite Applications

Closing the gap between concept and commercialisation

The vision: A network of world-leading centres

- Bringing research and business together
- Accelerating commercialisation
- More than £200M investment in the future of the UK economy
- Investing for the long term



What is a Catapult centre?

Business-focused technology and innovation centre that makes world-leading technical capability available to businesses to solve their technical challenges.

Providing:

- Access to world-leading technology & expertise
- Reach into the knowledge base for world-class science
- Capability for:
 - collaborative R&D projects with business
 - contract research for business
- Skills development at all levels



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Satellite Applications

Catapults – the network

2011

- **High Value Manufacturing**

2012/13

- **Cell Therapy**
- **Satellite Applications**
- **Offshore Renewable Energy**
- **Connected Digital Economy**
- **Transport Systems**
- **Future Cities**

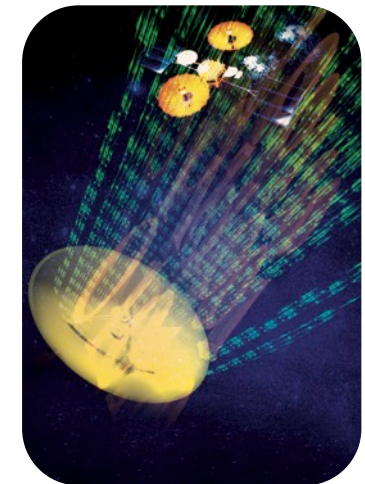
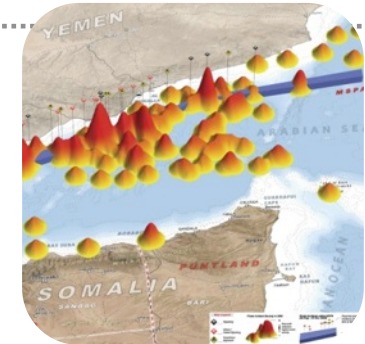
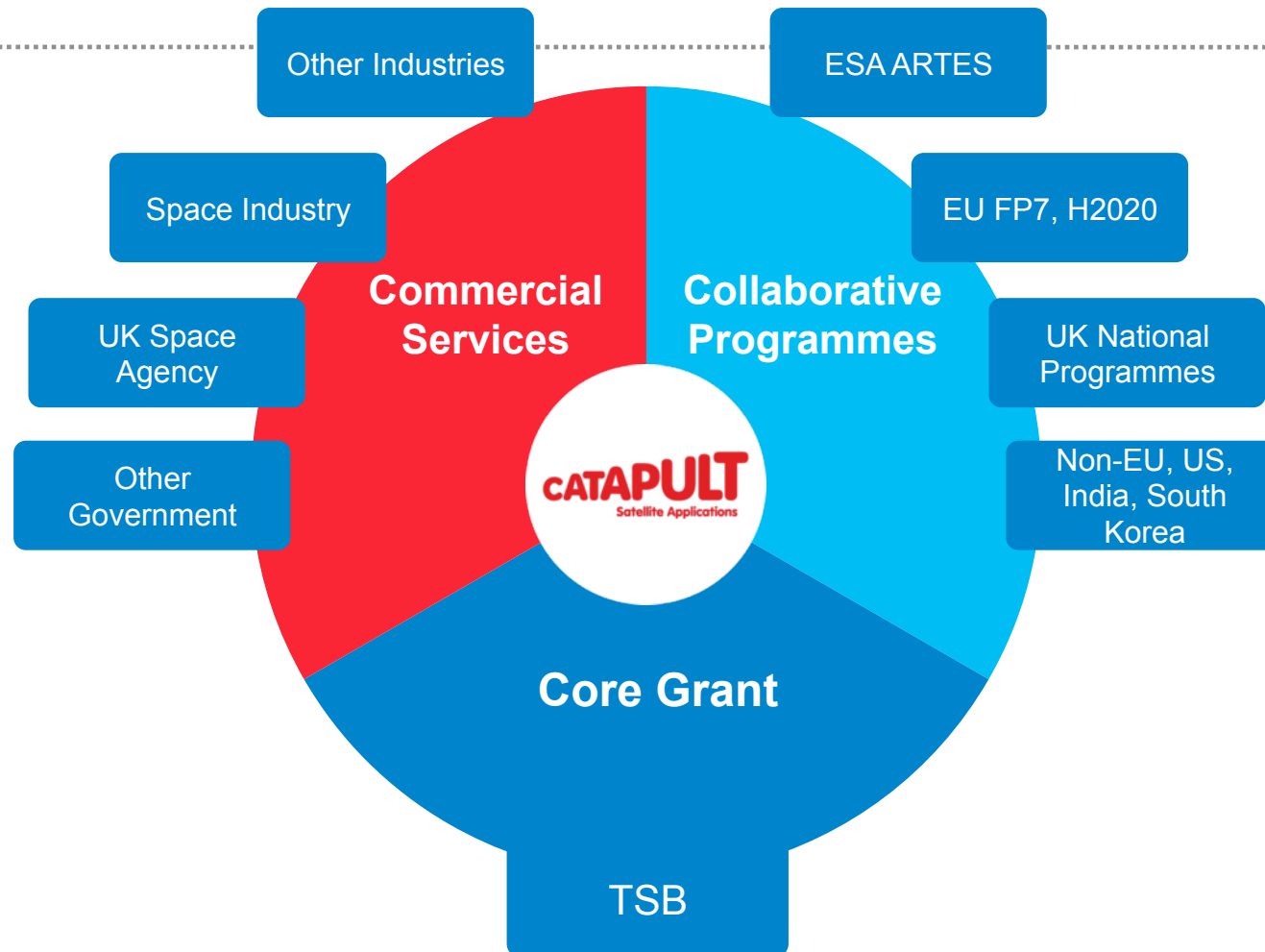
2013/14

- **Energy Systems**
- **Stratified Medicine**



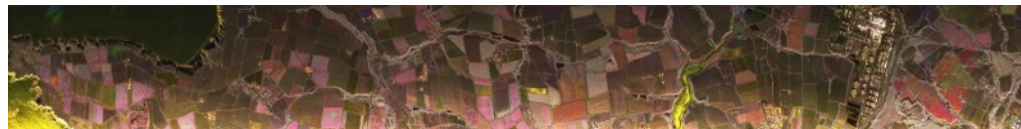
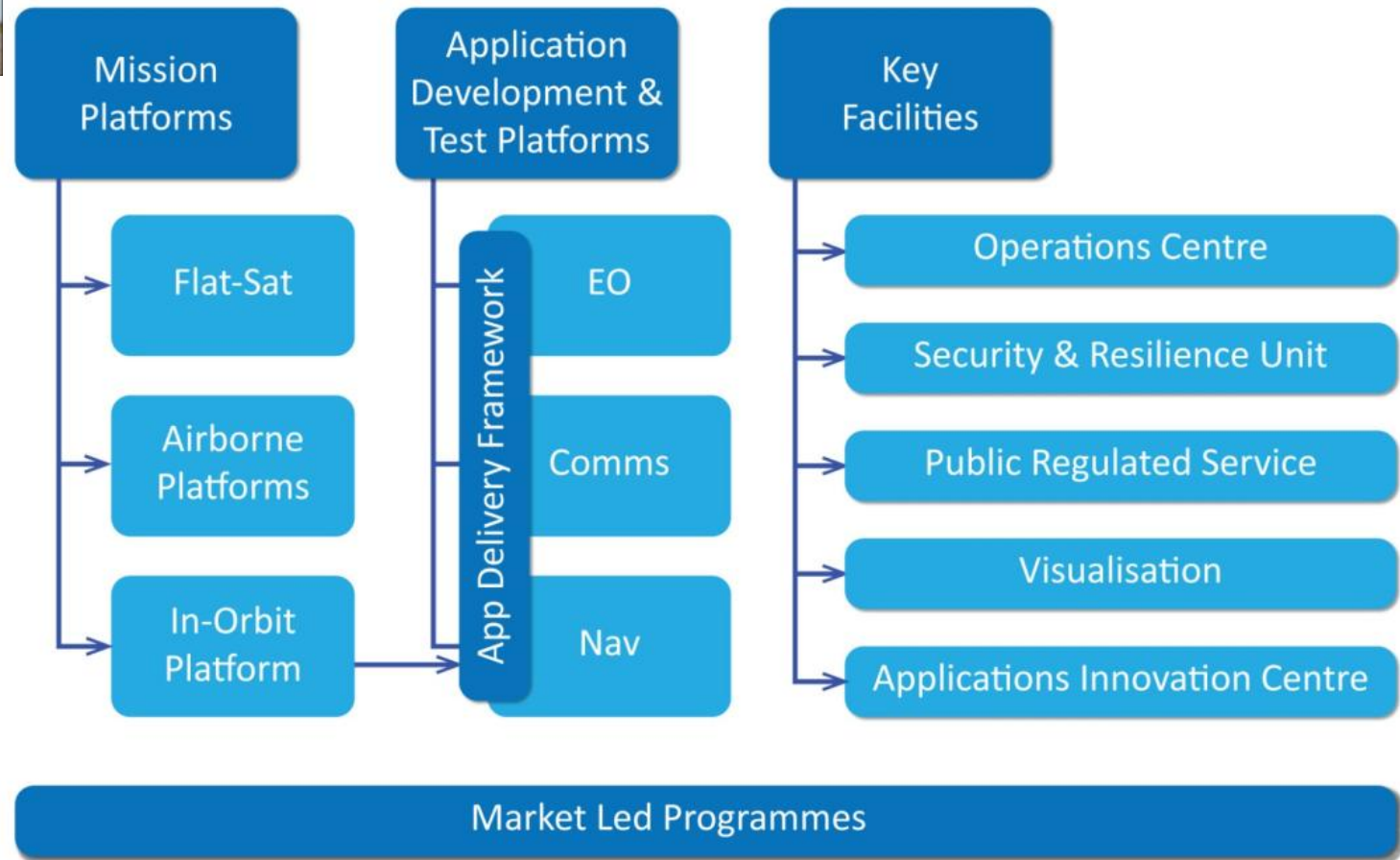
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Delivery Model



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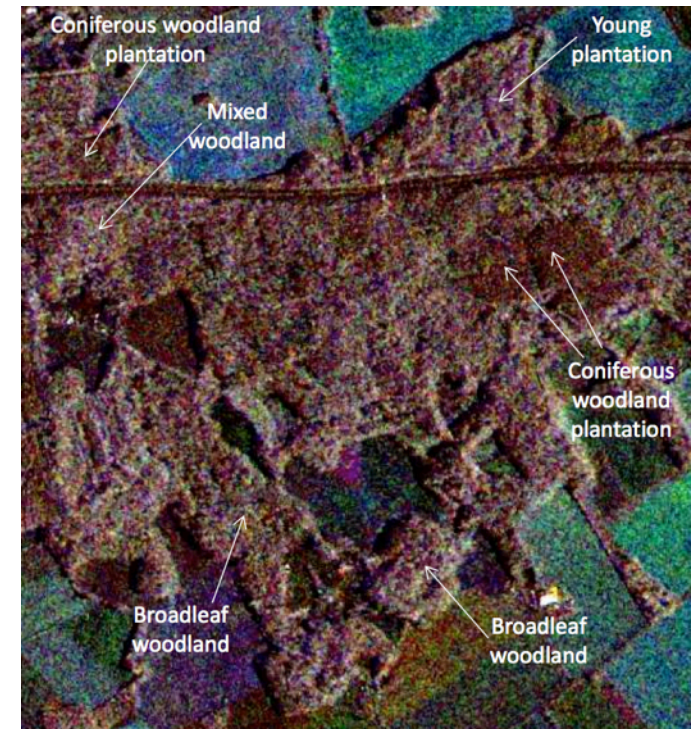
Catapult Facilities: For collaborative application development



Classification: Public

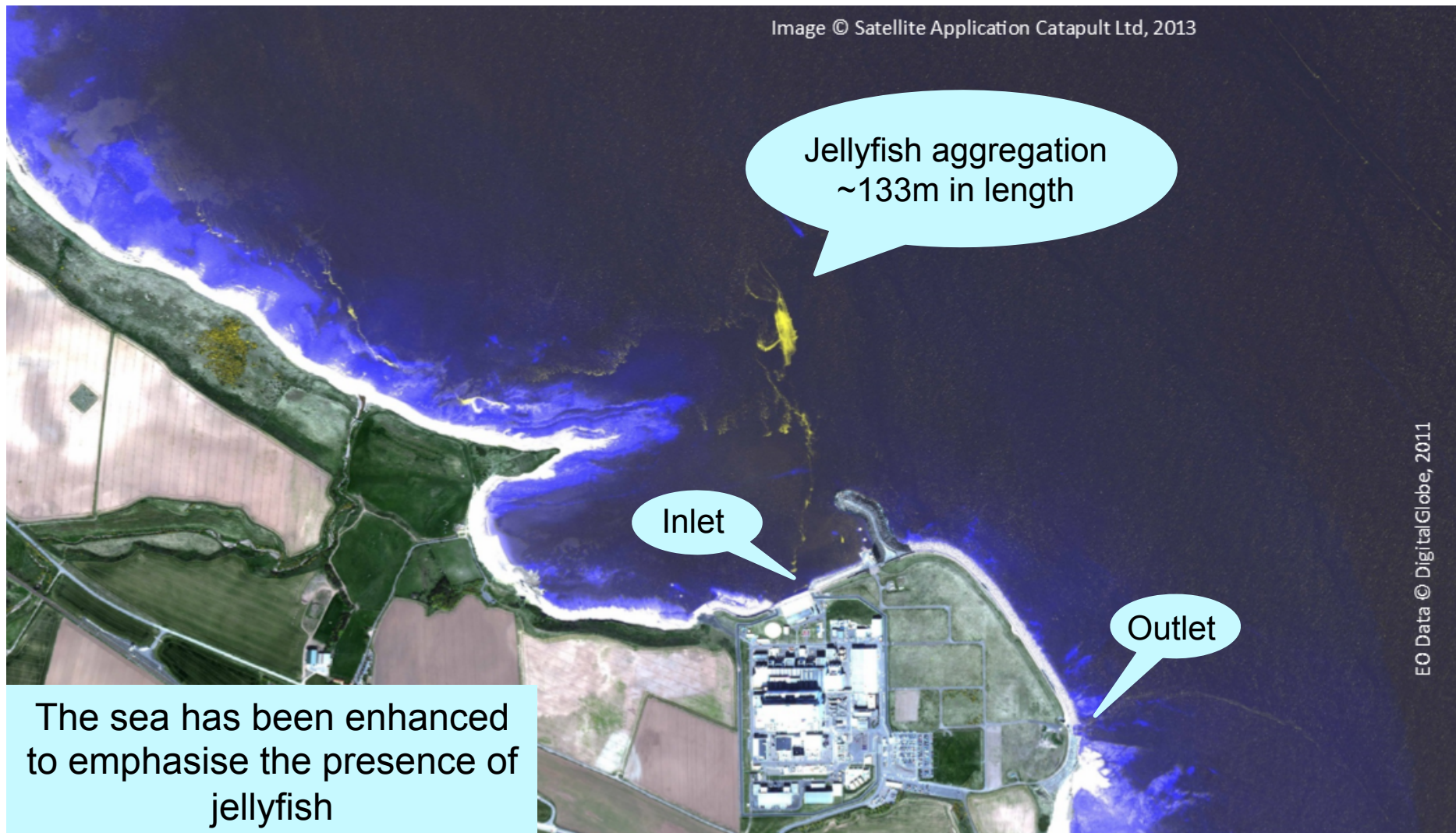
Initial Collaborative Projects

- Synthetic Aperture Radar (SAR) for River Catchment Monitoring
- Monitoring Road and Rail infrastructure using Satellites
- Satellite Mapping of Offshore Wind Resources
- Maritime operations: Situational Awareness, Illegal Fishing



Using high resolution imagery to identify jellyfish swarms

Image created by the fusion of 50cm data from WorldView 1& 2 satellite (28th June 2011)



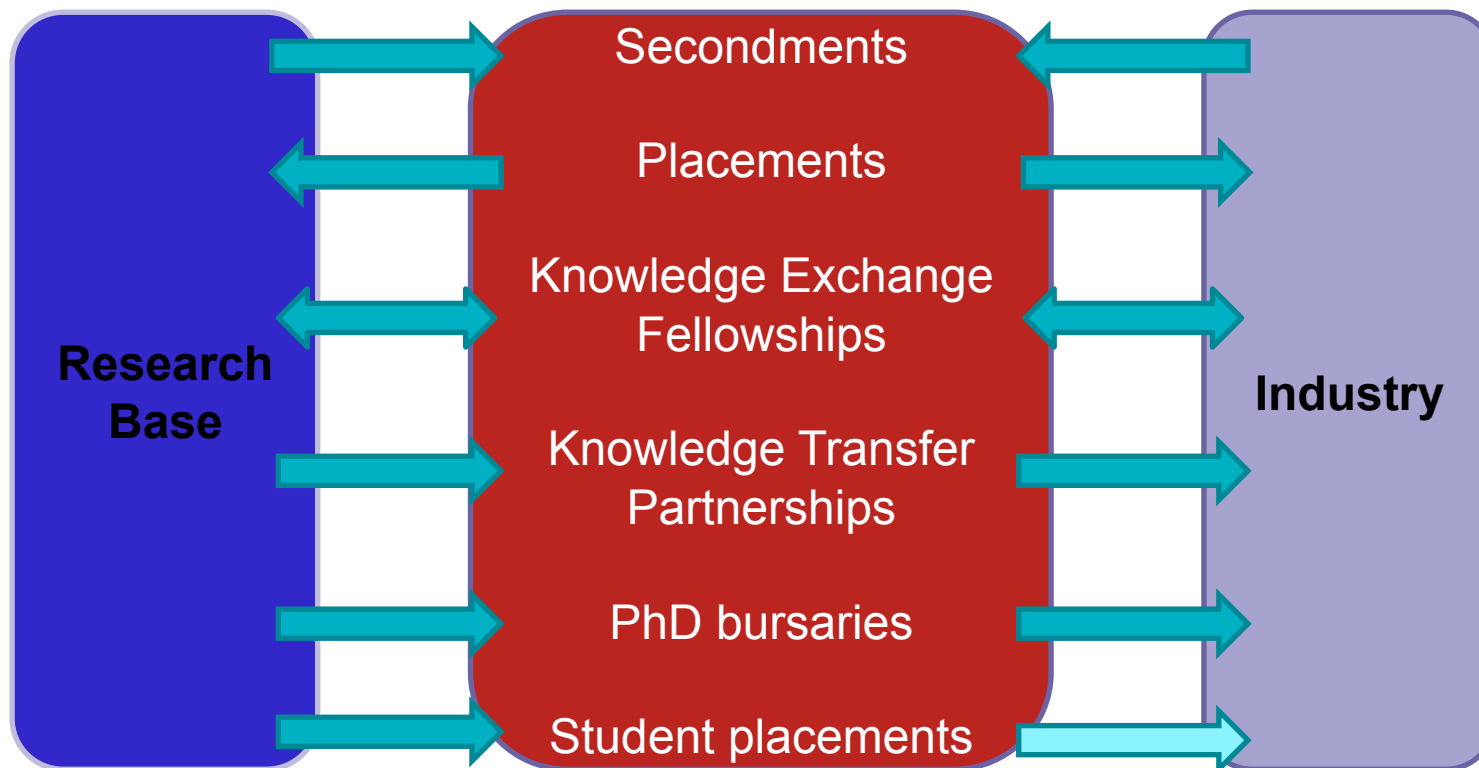
Support for Knowledge Exchange

Promotion of expertise in the research base

Networking, events, training, collaborative projects

People exchange schemes

Regional Centres of Excellence

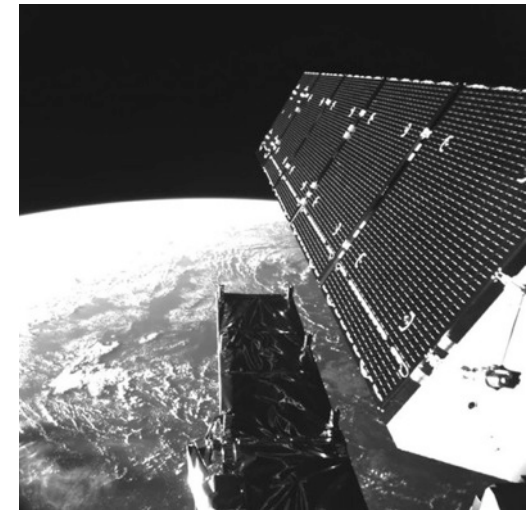


Support for EO data access and exploitation¹²

Synthetic Aperture Radar - SAR

Commercial:

TerraSAR-X (2 satellites X-Band)
Cosmo-Skymed (4 satellites X-band)
Radarsat 2 (1 satellite C-Band)



Free:

Sentinel 1A – launched 3rd April (1B to be added in 2016)
(but limited global coverage) (Catapult is gateway for UK access)

Future:

ALOS PALSAR (L-Band) (end 2014)
SSTL NovaSAR (S-Band) (end 2015)
Radarsat Continuity Mission (RCM) (C-Band) (2018)

Spatial resolution typically anything between 1m and 20m

Classification: Public

SAR – RadarSat 2 multi-polarisation



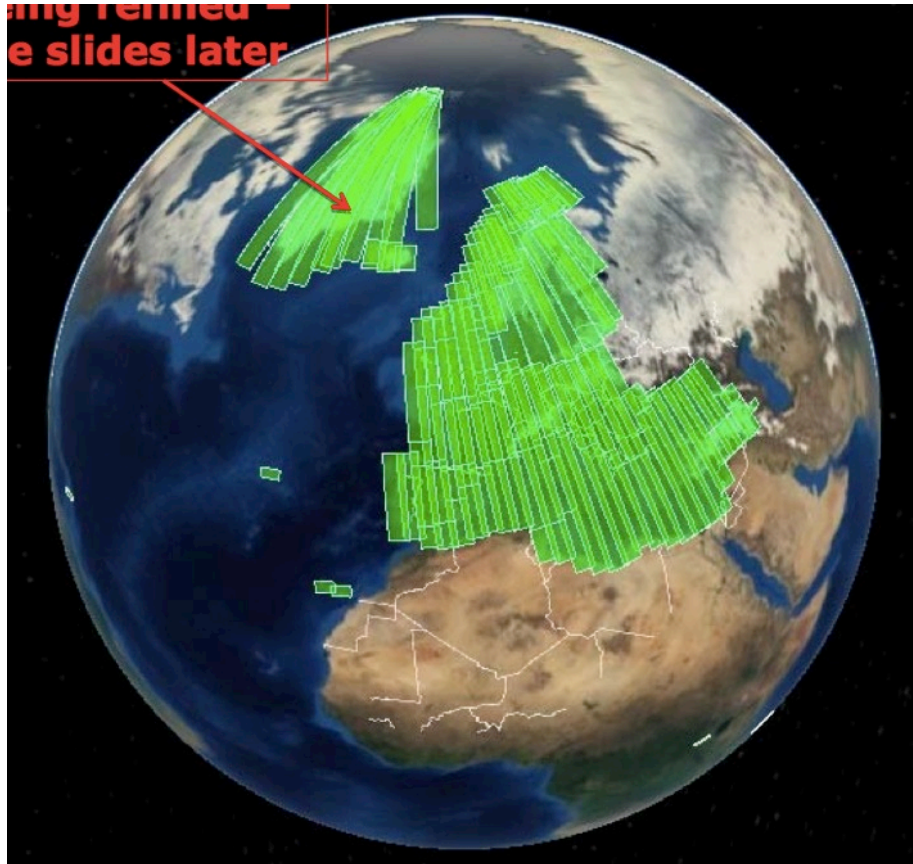
Classification: Public

SAR – Cosmo-Skymed multi-temporal

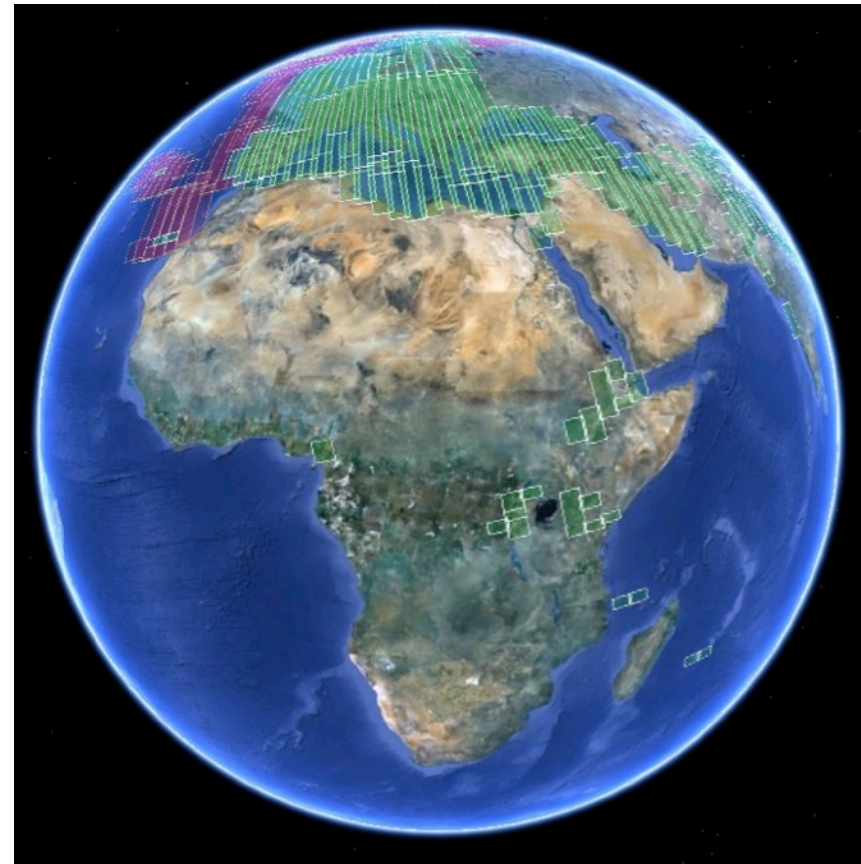


Sentinel 1 HLOP – 1st 6 months

Europe



Africa



Sentinel 1 HLOP – 1st 6 months

Asia



Americas



Classification: Public

Relationship to UK Space Agency

- **UK Space Agency focus on policy and strategy**
Relatively small organisation (~50 people)
- **Does not have it's own technical programme**
but supports UK industry
e.g. SSTL – Surrey Satellites Technology Ltd.
- **Works closely with Satellite Application Catapult**
Catapult: commercial exploitation
UK Space Agency: government support and science

Conclusions

More higher-resolution satellite data becoming available at no cost (e.g. Landsat 8; Sentinel missions)

But data processing and distribution will remain a challenge

Thank-you

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